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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,495	07/01/2003	Isao Adachi	115991	1663
25944	7590	07/14/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DINH, JACK	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/609,495		ADACHI, ISAO	
	<b>Examiner</b>		<b>Art Unit</b>	
	Jack Dinh		2873	<i>AD</i>

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0703</u> . | 6) <input checked="" type="checkbox"/> Other: <u>DETAILED ACTION</u> .                  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuichi (Japan Patent Publication 2001-305552) in view of Cammenga et al. (US Patent 6,166,848).

(a) Regarding claim 1, Shuichi (figure 1) is interpreted as disclosing an electro-optical device comprising an electro-optical substance 30, a pair of substrates 10 and 20 holding the electro-optical substance, and pole-like spacers 202 provided on at least one of the pair of substrates on a to-be provided surface 201 of the at least one substrate facing the electro-optical substance. Shuichi is interpreted as disclosing all the claimed limitations except that the pole-like spacer having, at roots thereof, a slope portion with a surface connecting to the to-be-provided surface. Within the same field of endeavor, Cammenga et al. (figure 6) is interpreted as disclosing an electro-optical device comprising a pole-like spacers 116i provided on at least one of the pair of substrates on a to-be provided surface 114a of the at least one substrate facing the electro-optical substance, wherein the pole-like spacers having, at roots thereof, a slope portion (see figure) with a surface connecting to the to-be-provided surface. Therefore, it would have

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been obvious to one having ordinary skill in the art at the time that the invention was made to provide pole-like spacers having a slope portion at roots thereof, as taught by Cammenga et al., for the purpose of reducing the formation of poorly oriented regions.

(b) Regarding claim 2, Shuichi is interpreted as disclosing all the claimed limitations, as described in claim 1. Shuichi (figure 1) further discloses an orientation film **203** formed on the to-be-provided surface, the pole-like spacers **202** having an elliptic shape (figure 7, e1 and e2) in cross-section on a plane in parallel with the to-be-provided surface, and a long diameter of the elliptic shape extending in a direction in agreement with a direction in which the orientation film is rubbed.

(c) Regarding claim 4, Cammenga et al. (figure 6) is interpreted as further disclosing a slope portion being formed on an entire outer circumference of the pole-like spacers (see figure).

(d) Regarding claim 5, Cammenga et al. (figure 6) is interpreted as further disclosing that the pole-like spacers **116i** having a maximum area of sectional shape on a plane in parallel with the to-be-provided surface **114a** and in contact with the to-be-provided surface, and the area decreasing as it extends from the to-be-provided surface (see figure).

(e) Regarding claim 6, Shuichi (figure 7/e1) is interpreted as further disclosing the pole-like spacers having a semi-elliptic spherical shape.

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(f) Regarding claim 7, Cammenga et al. (figure 6) is interpreted as further disclosing a head end of the pole-like spacers including a flat surface (see figure).

(g) Regarding claim 8, Shuichi (figure 5) is interpreted as further disclosing a first striped wiring **111** and a second striped wiring **112** formed on a substrate intersecting each other, switching elements **113** and pixel electrodes **114** formed corresponding to regions where the second striped wiring and the first striped wiring intersect each other, and a light-shielding film **40** formed on a substrate corresponding to a position where the first striped wiring and the second striped wiring are formed (see figure 10), wherein the pole-like spacers **202** being arranged within a width of the light-shielding film.

(h) Regarding claim 9, Shuichi (figure 2) is interpreted as further disclosing a first striped electrode **101** formed on one substrate, a second striped electrode **201** formed on the other substrate, and extending in a direction that intersects the first striped electrode, and a light-shielding film **40** formed on the at least one substrate except regions where the first striped electrode and the second striped electrode intersect each other (see figure 10), the pole-like spacers **202** being arranged within a width of the light-shielding film.

(i) Regarding claim 10, Cammenga et al. (figure 2) is interpreted as further disclosing an electronic equipment **7** comprising the electro-optical device according to claim 1.

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2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shuichi (Japan Patent Publication 2001-305552) in view of Cammenga et al. (US Patent 6,166,848).

Regarding claim 3, Shuichi (figure 1) is interpreted as disclosing an electro-optical device comprising an electro-optical substance **30**, a pair of substrates **10** and **20** holding the electro-optical substance, pole-like spacers **202** provided on at least one of the pair of substrates on a to-be-provided surface **201** of the at least one substrate facing the electro-optical substance, and an orientation film **203** formed on the to-be-provided surface, the pole-like spacers having a semi-elliptic shape (figure 7, e1) in cross-section in a direction in parallel with the to-be-provided surface, and a long diameter of the elliptic shape stretching in a direction in agreement with a direction in which the orientation film is rubbed. Shuichi is interpreted as disclosing all the claimed limitations including pole-like spacers having a semi-elliptic shape, rather than elliptic shape being claimed. However, figure 7 of Shuichi discloses various shapes representing the pole-like spacers. For instance, figure 7/a1 and 7/b1 show a semi-rhombus and a rhombus, respectively, would clearly suggest to one skilled in the art that an elliptic shape can be formed over the semi-elliptic shape of figure 7/e1. Furthermore, various shapes show in figure 7 shows that the claimed elliptic shape is clearly confined with the scope of the invention. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide an elliptic shape for the pole-like spacers, or perhaps any other modified shapes within one skilled in the art, for the purpose of forming a preferred shape for the pole-like spacers.

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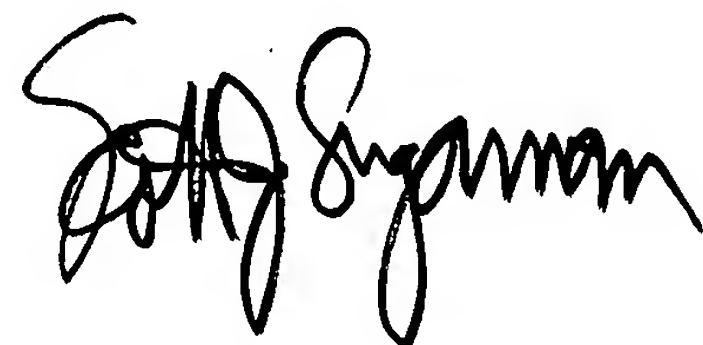
***Other Information/Remarks***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh

A handwritten signature in black ink, appearing to read "Scott J. Sugarman". The signature is stylized with a large, looped "S" and a cursive "J".

**Scott J. Sugarman  
Primary Examiner**